



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,085	03/27/2006	George C. Zguris	2009018-0032	2471
24280 7590 03/01/2010 CHOATE, HALL & STEWART LLP TWO INTERNATIONAL PLACE BOSTON, MA 02110				
EXAMINER MEKHLIN, ELI S				
ART UNIT		PAPER NUMBER		
1795				
NOTIFICATION DATE		DELIVERY MODE		
03/01/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@choate.com

Office Action Summary

Application No.

10/561,085

Applicant(s)

ZGURIS, GEORGE C.

Examiner

ELI MEKHLIN

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) 1-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

(1)

The response filed January 20, 2010, has been entered. Claims 33-65 are pending before the Office for review. Claims 1-32 are withdrawn from consideration as being directed toward a non-elected invention.

(2)

Response to Arguments

Applicant's arguments filed January 20, 2010, have been fully considered but they are not persuasive.

First, Applicant argues that the claim does not require that the fibrous material actually pass through the mesh during a shake test immediately prior to combination with the electrolyte. Rather, the claims require that the fibrous material is capable of passing through a 4x4 mesh during a shake test. However, although Applicant argues that there is support for the "immediately prior" limitation on the fibrous material's capability, Applicant has not provided any indication where such support can be found in the Specification. In fact, the word "immediately" is entirely absent from the Specification and claims as originally filed.

Additionally, Applicant argues that the phrase "immediately prior" is used to "convey a point in the claimed process at which the fibrous material possesses these physical characteristics." Even assuming that there is support for this limitation on the fibrous material in the Specification, this characterization of "immediately prior" does not preclude the possibility of an intervening step. Moreover, even if "immediately prior"

precludes intervening steps, the fibrous material, even if aggregated and formed into a component part, still individually maintains the physical capability of being able to pass through the mesh shake test. Specifically, Reher teaches that fibers (fibrous material) are added to an electrode material. However, even though the fibers are now part of a component, the individual fibers still maintain the same physical characteristics and thus are still capable of passing through the 4x4 mesh shake test. Accordingly, Examiner notes that the claimed invention does not preclude the possibility that the fibrous material has the physical capability of passing through the shake test while simultaneously being part of a component material. Additionally, an electrode material is in contact with electrolyte and is combined with the electrolyte.

Applicant appears to be under the impression that the limitation regarding the actual 4x4 mesh shake test was also subject to the new matter rejection. Examiner apologizes for this confusion and would like to clarify that only "immediately prior" is rejected as new matter.

Applicant's arguments regarding the 34 U.S.C. 112, second paragraph rejection with respect to the 4x4 mesh shake test limitation are persuasive and the rejection is accordingly withdrawn.

Applicant's argument regarding the indefiniteness of "immediately" is not persuasive. Applicant asserts that the term is used to fix a point in time during which the fibrous material possess certain physical characteristics. However, even if this interpretation of the claim is correct, the vagueness of the term immediately does not fix a point in time rather it simply indicates that something is done with few or no

intervening steps. Immediately also does not preclude the possibility that two steps are being performed simultaneously. Specifically, fibrous material (fibers) can have the physical capability to pass through the mesh shake test "immediately prior" to addition to electrolyte but this does not preclude the possibility that while the fibers maintain this capability they are also being aggregated into an electrode that comprises fibrous material.

Applicant's primary argument regarding the combination of Holland in view of Reher is that Reher teaches that the fibrous material (fibers) are part of the electrode material. Examiner agrees with this characterization of Reher. However, Examiner does not agree with Applicant's claim interpretation. The claimed invention simply requires fibers with a certain physical characteristic wherein the fibers are combined with electrolyte. A person having ordinary skill in the art at the time of invention would have appreciated that the fibers in an electrode contact electrolyte. Moreover, the claim does not preclude the possibility that a fiber can satisfy the physical requirements of the claim while still being part of an aggregate material. Specifically, it is Examiner's position that the fibrous material comprising the electrode in Reher have the individual physical capability to pass through the mesh shake test even though the aggregated fibrous material (electrode) does not have this capability. Specifically, Reher teaches that at least five weight percent of the fibrous material (which is used in the electrode) can pass through a 4x4 mesh shake test. Reher, Paragraph 59.

Applicant repeats this argument with respect to the combination of Holland, Reher and Zguris. However, as discussed above, the claimed invention does not

preclude the possibility that the fibers (fibrous material) maintain their physical capability while at the same time the fibers are aggregated into a component material.

Therefore, for the reasons discussed above, the rejection is maintained.

Previous Grounds of Rejection

(3)

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 33-65 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the claims, as amended, indicate that "immediately prior" to being combined with an electrolyte, the fibrous material passes through a 4x4 shake test. However, there is no support in the Specification or Claims, as originally filed, for the "immediately prior" processing limitation. Although Applicant teaches that the fibrous material is combined with the electrolyte and that some of the fibrous material passes this mesh shake test, Applicant did not teach, in the Specification as originally filed, that the fibrous material is combined with the electrolyte immediately after passing the mesh shake test.

(4)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The term "immediately" in claims 33-65 is a relative term which renders the claim indefinite. The term "immediately" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Accordingly, for purposes of examination, Examiner will interpret "immediately" to require that the fibrous material is passed through the 4x4 mesh within a reasonable length of time before the fibrous material is added to the battery case. However, this interpretation does not mean that an intervening step cannot occur before the mesh shake test and the addition of the fibrous material to the battery case.

(5)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 33, 34, 36-45, 47-53, 55-60 and 62-65 are rejected under 35 U.S.C.

103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Reher et al. (U.S. Publication No. 2003/0182972).

With respect to **claim 33**, Holland teaches a high-capacity lead battery. Abstract. Holland teaches that the battery is constructed by placing a fibrous web in a battery case and combining the fibrous web with an electrolyte. Col. 4, Lines 1-10. Although Holland teaches that fibrous material is added to the battery case, Holland is silent as to the diameter of the fiber in the fibrous material and whether five weight percent of the fiber in the fibrous material is capable of passing through a 4x4 mesh during a shake test.

However, Reher, which deals with glass fibers for use in acid batteries, teaches that at least five weight percent of the glass fibers pass through a 4x4 mesh shake test before they are used in the lead acid battery. Paragraph 59. Additionally, Reher teaches that using such fibers in lead-acid batteries improves the performance of the batteries. Paragraph 20.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use the glass fibers taught by Reher in the battery taught by Holland, as described above, because Reher teaches that using glass fibers, five

percent of which can pass through a 4x4 mesh shake test before they are added to the battery, improves the performance of said battery. Reher, Paragraphs 20 and 59.

With respect to **claim 34**, Holland teaches that the electrolyte comprises sulfuric acid. Col. 3, Lines 60-64.

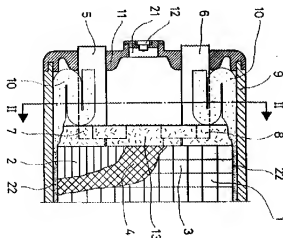
With respect to **claim 36**, Reher teaches that the before the glass fiber is added to the battery case, the glass fiber and electrolyte are combined and then subjected to a hand sheet test (filtration) wherein some of the glass fibers are lost. Paragraph 60.

With respect to **claims 37 and 38**, Holland teaches that the electrolyte is disposed in the case before the fibrous material is disposed in the case. Col. 4, Lines 1-10. Additionally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and fibrous material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 39**, a person having ordinary skill in the art at the time of invention would have appreciated that when a battery case is filled with electrolyte, the case is substantially devoid of any electrolyte before the electrolyte is added to the case.

With respect to **claim 40**, Holland further teaches that the battery comprises a plurality of positive and negative electrode plates that are arranged with a separator disposed between a pair of a positive electrode and a negative electrode. Col. 3, Lines 51-55.

With respect to **claim 41**, Holland teaches that some of the fibrous material (22) is disposed between the cell group (1) and the battery case cover (11). Figure 1 (depicted below).



With respect to **claim 42**, Holland teaches that the battery has a space (fringe volume) between the case and the cell and that the fibrous material (22) is disposed in the space (fringe volume). Figure 1 (depicted above).

With respect to **claim 43**, Holland teaches that the fibrous material is added around the cell, meaning that the cell is constructed before the fibrous material is disposed within the case. Col. 4, Lines 1-10.

With respect to **claim 44**, Holland and Reher, as combined above, are silent as to whether the cell is constructed before the electrolyte is disposed within the case or vice versa. However, a person having ordinary skill in the art at the time of invention would have appreciated that, since the electrolyte is an acid-containing fluid, it would have been easier and safer to construct the cell in the case before the electrolyte is added because doing so avoids the potential for acid exposure. Additionally, as

discussed above, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and cell are both added to the battery case, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 45**, Holland teaches that the battery can be a lead-acid battery. Col. 1, Lines 6-8, Col. 3, Lines 60-64.

With respect to **claim 47**, Reher teaches that the fibrous material that can be added to batteries can be siliceous. Paragraph 51.

With respect to **claim 48**, Reher teaches that the glass giber can have an average length of 0.1 mm to 1.5 mm. Paragraph 53.

With respect to **claim 49**, Reher teaches that the glass giber can have an average length of 0.1 mm to 1.5 mm. Paragraph 53.

With respect to **claim 50**, Reher teaches that the fibers have an average aspect ratio of less than 1,500. Paragraph 63.

With respect to **claim 51**, Holland and Reher, as combined above, teach a battery that is constructed by placing a fibrous web in a battery case and combining the fibrous web with an electrolyte. Holland, Col. 4, Lines 1-10. Holland and Reher further teach that fibrous material is added to the battery case. Holland, Col. 4, Lines 1-10. Specifically, Reher teaches that at least five weight percent of the glass fibers pass through a 4x4 mesh shake test before they are used in the lead acid battery. Reher, Paragraph 59. Additionally, Holland and Reher further teach that the battery comprises

a plurality of positive and negative electrode plates that are arranged with a separator disposed between a pair of a positive electrode and a negative electrode. Holland, Col. 3, Lines 51-55.

With respect to **claim 52**, Holland teaches that an electrolyte is disposed within the case. Col. 4, Lines 1-10.

With respect to **claim 53**, Holland teaches that the electrolyte comprises sulfuric acid. Col. 3, Lines 60-64.

With respect to **claims 55 and 56**, Holland teaches that the electrolyte is disposed in the case before the fibrous material is disposed in the case. Col. 4, Lines 1-10. Additionally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and fibrous material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 57**, a person having ordinary skill in the art at the time of invention would have appreciated that when a battery case is filled with electrolyte, the case is substantially devoid of any electrolyte before the electrolyte is added to the case.

With respect to **claim 58**, Holland teaches that some of the fibrous material (22) is disposed between the cell group (1) and the battery case cover (11). Figure 1 (depicted above).

With respect to **claim 59**, Holland teaches that the battery has a space (fringe volume) between the case and the cell and that the fibrous material (22) is disposed in the space (fringe volume). Figure 1 (depicted above).

With respect to **claim 60**, Holland teaches that the battery can be a lead-acid battery. Col. 1, Lines 6-8, Col. 3, Lines 60-64.

With respect to **claim 62**, Reher teaches that the fibrous material that can be added to batteries can be siliceous. Paragraph 51.

With respect to **claim 63**, Reher teaches that the glass giber can have an average length of 0.1 mm to 1.5 mm. Paragraph 53.

With respect to **claim 64**, Reher teaches that the glass giber can have an average length of 0.1 mm to 1.5 mm. Paragraph 53.

With respect to **claim 65**, Reher teaches that the fibers have an average aspect ratio of less than 1,500. Paragraph 63.

(6)

Claims 35, 46, 54 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Reher et al. (U.S. Publication No. 2003/0182972), as applied to claims 33, 34, 36-45, 47-53, 55-60 and 62-65 above, and further in view of Inagaki et al. (U.S. Patent No. 6,150,056).

With respect to **claims 35 and 54**, Holland and Reher, as combined above, teach that the electrolyte comprises sulfuric acid but are silent as to whether the electrolyte can also comprise potassium hydroxide.

However, INAGAKI, which deals with battery design, teaches that potassium hydroxide can be used as an electrolyte in a battery to help produce a battery with increased energy capacity. Col. 2, Lines 43-48, Col. 6, Lines 41-46.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention that potassium hydroxide could also be used in the electrolyte taught by Holland and Zguris, as combined above, because Inagaki teaches that potassium hydroxide can be used as an electrolyte in the production of batteries with increased capacity.

With respect to **claims 46 and 61**, Inagaki teaches that potassium hydroxide electrolyte can be used in a nickel-metal hydride battery. Col. 6, Lines 46-49.

(7)

Claims 33, 34, 37-45, 47, 49, 51-53, 55-60, 62 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Zguris (U.S. Patent No. 6,306,539).

With respect to **claim 33**, Holland teaches a high-capacity lead battery. Abstract. Holland teaches that the battery is constructed by placing a fibrous web in a battery case and combining the fibrous web with an electrolyte. Col. 4, Lines 1-10. Although Holland teaches that fibrous material is added to the battery case, Holland is silent as to the diameter of the fiber in the fibrous material and whether five weight percent of the fiber in the fibrous material is capable of passing through a 4x4 mesh during a shake test.

However, Zguris, which deals with the use of glass fibers in lead-acid batteries, teaches that glass fibers that are used as fibrous material in batteries have an average diameter of 0.8 microns. Col. 12, Lines 4-9. As explained above, a 4x4 mesh shake test passes fibers through a mesh with a diameter of 4.69 millimeters, which is the equivalent of 4,690 microns. Based on this disclosure, a person having ordinary skill in the art at the time of invention would have appreciated that approximately 100% of glass fibers with a average diameter size of 0.8 microns is capable of passing through a 4x4 mesh shake test because the size of the diameter in the mesh is significantly larger than the average diameter of the glass fibers. Accordingly, at some point prior to being combined with electrolyte, 100% of the glass fibers taught by Zguris are capable of being passed through the 4x4 mesh shake test.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use glass fibers of the size taught by Zguris in the battery taught by Holland because Zguris teaches that batteries containing micro-fiber materials, of the type described above, exhibit increased compression resiliency.

With respect to **claim 34**, Holland teaches that the electrolyte comprises sulfuric acid. Col. 3, Lines 60-64.

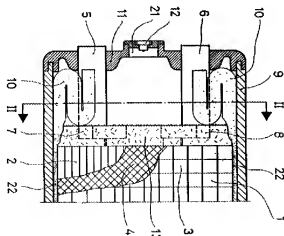
With respect to **claims 37 and 38**, Holland teaches that the electrolyte is disposed in the case before the fibrous material is disposed in the case. Col. 4, Lines 1-10. Additionally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and fibrous

material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 39**, a person having ordinary skill in the art at the time of invention would have appreciated that when a battery case is filled with electrolyte, the case is substantially devoid of any electrolyte before the electrolyte is added to the case.

With respect to **claim 40**, Holland further teaches that the battery comprises a plurality of positive and negative electrode plates that are arranged with a separator disposed between a pair of a positive electrode and a negative electrode. Col. 3, Lines 51-55.

With respect to **claim 41**, Holland teaches that some of the fibrous material (22) is disposed between the cell group (1) and the battery case cover (11). Figure 1 (depicted below).



With respect to **claim 42**, Holland teaches that the battery has a space (fringe volume) between the case and the cell and that the fibrous material (22) is disposed in the space (fringe volume). Figure 1 (depicted above).

With respect to **claim 43**, Holland teaches that the fibrous material is added around the cell, meaning that the cell is constructed before the fibrous material is disposed within the case. Col. 4, Lines 1-10.

With respect to **claim 44**, Holland and Zguris, as combined above, are silent as to whether the cell is constructed before the electrolyte is disposed within the case or vice versa. However, a person having ordinary skill in the art at the time of invention would have appreciated that, since the electrolyte is an acid-containing fluid, it would have been easier and safer to construct the cell in the case before the electrolyte is added because doing so avoids the potential for acid exposure. Additionally, as discussed above, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and cell are both added to the battery case, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 45**, Holland teaches that the battery can be a lead-acid battery. Col. 1, Lines 6-8, Col. 3, Lines 60-64.

With respect to **claim 47**, Holland and Zguris, as combined above, teach that the fibrous material that can be added to batteries can also comprise siliciferous material. Col. 18, Lines 45-47.

With respect to **claim 49**, Holland and Zguris, as combined above, teach that the fibers have a diameter of 0.8 microns. Zguris, Col. 12, Lines 4-9.

With respect to **claim 51**, Holland and Zguris, as combined above, teach a battery that is constructed by placing a fibrous web in a battery case and combining the fibrous web with an electrolyte. Holland, Col. 4, Lines 1-10. Holland and Zguris further teach that fibrous material is added to the battery case. Holland, Col. 4, Lines 1-10. Specifically, Zguris teaches that the glass fibers that are used as the fibrous material in batteries have an average diameter of 0.8 microns. Zguris, Col. 12, Lines 4-9. As explained above, a 4x4 mesh shake test passes fibers through a mesh with a diameter of 4.69 millimeters, which is the equivalent of 4,690 microns. Based on this disclosure, a person having ordinary skill in the art at the time of invention would have appreciated that approximately 100% of glass fibers with a average diameter size of 0.8 microns is capable of passing through a 4x4 mesh shake test because the size of the diameter in the mesh is significantly larger than the average diameter of the glass fibers. Accordingly, at some point prior to being combined with electrolyte, 100% of the glass fibers taught by Zguris are capable of being passed through the 4x4 mesh shake test.

Additionally, Holland and Zguris further teach that the battery comprises a plurality of positive and negative electrode plates that are arranged with a separator disposed between a pair of a positive electrode and a negative electrode. Col. 3, Lines 51-55.

With respect to **claim 52**, Holland teaches that an electrolyte is disposed within the case. Col. 4, Lines 1-10.

With respect to **claim 53**, Holland teaches that the electrolyte comprises sulfuric acid. Col. 3, Lines 60-64.

With respect to **claims 55 and 56**, Holland teaches that the electrolyte is disposed in the case before the fibrous material is disposed in the case. Col. 4, Lines 1-10. Additionally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and fibrous material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 57**, a person having ordinary skill in the art at the time of invention would have appreciated that when a battery case is filled with electrolyte, the case is substantially devoid of any electrolyte before the electrolyte is added to the case.

With respect to **claim 58**, Holland teaches that some of the fibrous material (22) is disposed between the cell group (1) and the battery case cover (11). Figure 1 (depicted above).

With respect to **claim 59**, Holland teaches that the battery has a space (fringe volume) between the case and the cell and that the fibrous material (22) is disposed in the space (fringe volume). Figure 1 (depicted above).

With respect to **claim 60**, Holland teaches that the battery can be a lead-acid battery. Col. 1, Lines 6-8, Col. 3, Lines 60-64.

With respect to **claim 62**, Holland and Zguris, as combined above, teach that the fibrous material that can be added to batteries can also comprise siliciferous material. Col. 18, Lines 45-47.

With respect to **claim 64**, Holland and Zguris, as combined above, teach that the fibers have a diameter of 0.8 microns. Zguris, Col. 12, Lines 4-9.

(8)

Claims 35, 46, 54 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Zguris (U.S. Patent No. 6,306,539), as applied to claims 33, 34, 36-45, 47, 49, 51-53, 55-60, 62 and 64 above, and further in view of Inagaki et al. (U.S. Patent No. 6,150,056).

With respect to **claims 35 and 54**, Holland and Zguris, as combined above, teach that the electrolyte comprises sulfuric acid but are silent as to whether the electrolyte can comprise potassium hydroxide.

However, INAGAKI, which deals with battery design, teaches that potassium hydroxide can be used as an electrolyte in a battery to help produce a battery with increased energy capacity. Col. 2, Lines 43-48, Col. 6, Lines 41-46.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention that potassium hydroxide could also be used in the electrolyte taught by Holland and Zguris, as combined above, because Inagaki teaches that potassium hydroxide can be used as an electrolyte in the production of batteries with increased capacity.

With respect to **claims 46 and 61**, Inagaki teaches that potassium hydroxide electrolyte can be used in a nickel-metal hydride battery. Col. 6, Lines 46-49.

(9)

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Zguris (U.S. Patent No. 6,306,539), as applied to claims 33, 34, 36-45, 47, 49, 51-53, 55-60, 62 and 64 above, and further in view of Fang (U.S. Patent No. 4,238,303).

With respect to **claim 36**, Holland and Zguris, as combined above, teach that the fibrous material and the electrolyte are both disposed within the battery case. Col. 4, Lines 1-10. Additionally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and fibrous material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

Additionally, Fang, which deals with the use of glass fibers in an electric cell, teaches a manufacturing process wherein the components to which the glass fibers are added are pre-mixed with the glass fiber and then filtered. Col. 8, Lines 28-36. Specifically, Fang teaches that the fiber-containing dispersion is filtered and then formed into the diaphragm, which is added to the electric cell. Col. 8, Lines 28-36.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to filter the fibrous material-containing electrolyte, as taught by

Holland and Zguris, as combined above, because Fang teaches that such a production process can be used to effectively prepare a fibrous material for electric cells.

(10)

Claims 48, 50, 63 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Zguris (U.S. Patent No. 6,306,539), as applied to claims 33, 34, 36-45, 47, 49, 51-53, 55-60, 62 and 64 above, and further in view of Cusick et al. (U.S. Patent No. 6,227,009)

With respect to **claims 48 and 63**, Holland and Zguris, as combined above, teach that the glass fibers in the fibrous material have an average diameter of 0.8 microns but are silent as to the length of the fibers.

However, Cusick, which deals with fibrous material for use in lead-acid batteries, teaches that glass fibers with a length of 1 millimeters can be in lead-acid batteries. Col. 14, Lines 35-37.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use a fiber with a length of 1 millimeters in the battery taught by Holland and Zguris, as combined above, because Cusick teaches that fibers of that length can be effectively used in lead-acid batteries.

With respect to **claims 50 and 65**, Holland, Zguris and Cusick, as combined above, teach that the glass fibers have an average diameter of 0.8 microns and an average length of 1.0 millimeters. This means that the fibers have an average aspect ratio of 1250, which is less than 1,500.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELI MEKHLIN whose telephone number is (571)270-7597. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ELI MEKHLIN/
Examiner, Art Unit 1795

/Jennifer Michener/
SPE, AU1795